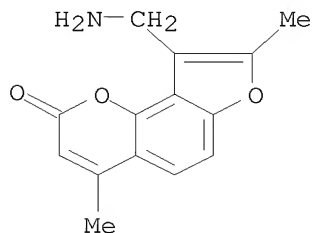


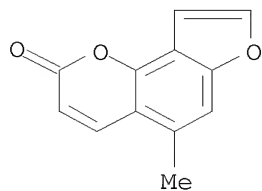
L1 ANSWER 3 OF 8 REGISTRY COPYRIGHT 2008 ACS on STN
 RN 80500-62-5 REGISTRY
 ED Entered STN: 16 Nov 1984
 CN 2H-Furo[2,3-h]-1-benzopyran-2-one, 9-(aminomethyl)-4,8-dimethyl- (CA INDEX NAME)
 OTHER NAMES:
 CN 4'-Aminomethyl-4,5'-dimethylangelicin
 CN 4'-Aminomethyl-4,5'-dimethylisopsoralen
 MF C14 H13 N O3
 CI COM
 LC STN Files: CA, CAPLUS, CASREACT, TOXCENTER, USPAT2, USPATFULL



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

30 REFERENCES IN FILE CA (1907 TO DATE)
 5 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 30 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L1 ANSWER 4 OF 8 REGISTRY COPYRIGHT 2008 ACS on STN
 RN 73459-03-7 REGISTRY
 ED Entered STN: 16 Nov 1984
 CN 2H-Furo[2,3-h]-1-benzopyran-2-one, 5-methyl- (CA INDEX NAME)
 OTHER NAMES:
 CN 5-Methylangelicin
 CN 5-Methylisopsoralen
 MF C12 H8 O3
 CI COM
 LC STN Files: BEILSTEIN*, BIOSIS, BIOTECHNO, CA, CAPLUS, CHEMCATS, CHEMLIST, DDFU, DRUGU, EMBASE, MEDLINE, NAPRALERT, RTECS*, SPECINFO, TOXCENTER, USPAT2, USPATFULL
 (*File contains numerically searchable property data)

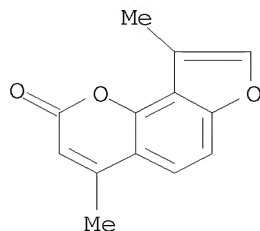


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

53 REFERENCES IN FILE CA (1907 TO DATE)
 5 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 53 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L1 ANSWER 5 OF 8 REGISTRY COPYRIGHT 2008 ACS on STN
 RN 22975-76-4 REGISTRY
 ED Entered STN: 16 Nov 1984

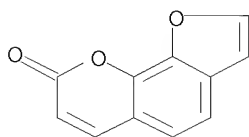
CN 2H-Furo[2,3-h]-1-benzopyran-2-one, 4,9-dimethyl- (CA INDEX NAME)
 OTHER NAMES:
 CN 4,4'-Dimethylangelicin
 CN 4,4'-Dimethylisopsoralen
 MF C13 H10 O3
 LC STN Files: BEILSTEIN*, BIOSIS, CA, CAPLUS, CHEMCATS, CHEMLIST, EMBASE,
 MEDLINE, RTECS*, SPECINFO, TOXCENTER
 (*File contains numerically searchable property data)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

29 REFERENCES IN FILE CA (1907 TO DATE)
 4 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 29 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L1 ANSWER 6 OF 8 REGISTRY COPYRIGHT 2008 ACS on STN
 RN 5768-44-5 REGISTRY
 ED Entered STN: 16 Nov 1984
 CN 8H-Furo[3,2-h][1]benzopyran-8-one (CA INDEX NAME)
 OTHER NAMES:
 CN 2-Propenoic acid, 3-(7-hydroxy-6-benzofuranyl)-, δ -lactone
 CN 7-Hydroxy-6-benzofuranacrylic acid δ -lactone
 CN Furo[4',5':7,8]coumarin
 CN Pseudoisopsoralen
 MF C11 H6 O3
 LC STN Files: BEILSTEIN*, BIOSIS, CA, CAPLUS, CASREACT, TOXCENTER
 (*File contains numerically searchable property data)

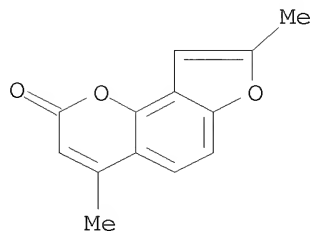


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

19 REFERENCES IN FILE CA (1907 TO DATE)
 3 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 19 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L1 ANSWER 7 OF 8 REGISTRY COPYRIGHT 2008 ACS on STN
 RN 4063-41-6 REGISTRY
 ED Entered STN: 16 Nov 1984
 CN 2H-Furo[2,3-h]-1-benzopyran-2-one, 4,8-dimethyl- (CA INDEX NAME)
 OTHER CA INDEX NAMES:
 CN 5-Benzofuranacrylic acid, 4-hydroxy- β ,2-dimethyl-, δ -lactone
 (6CI, 7CI)
 OTHER NAMES:
 CN 4,8-Dimethylisopsoralen
 CN NSC 627260

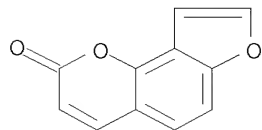
MF C13 H10 O3
 LC STN Files: BEILSTEIN*, BIOSIS, BIOTECHNO, CA, CAOLD, CAPLUS, CASREACT,
 CHEMCATS, CHEMINFORMRX, CHEMLIST, EMBASE, IPA, MEDLINE, NAPRALERT,
 RTECS*, SPECINFO, TOXCENTER, USPAT2, USPATFULL, USPATOLD
 (*File contains numerically searchable property data)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

94 REFERENCES IN FILE CA (1907 TO DATE)
 3 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 94 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 5 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L1 ANSWER 8 OF 8 REGISTRY COPYRIGHT 2008 ACS on STN
 RN 523-50-2 REGISTRY
 ED Entered STN: 16 Nov 1984
 CN 2H-Furo[2,3-h]-1-benzopyran-2-one (CA INDEX NAME)
 OTHER CA INDEX NAMES:
 CN Isopsoralen (6CI)
 OTHER NAMES:
 CN 2-Propenoic acid, 3-(4-hydroxy-5-benzofuranyl)-, δ -lactone
 CN Angecin
 CN Angelicin
 CN Angelicin (coumarin derivative)
 CN Furo[2,3-h]coumarin
 CN Furo[5',4':7,8]coumarin
 CN NSC 404563
 DR 39310-13-9
 MF C11 H6 O3
 CI COM
 LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BEILSTEIN*, BIOSIS, BIOTECHNO,
 CA, CAOLD, CAPLUS, CASREACT, CHEMCATS, CHEMINFORMRX, CHEMLIST, CSCHEM,
 DDFU, DRUGU, EMBASE, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE,
 NAPRALERT, RTECS*, SPECINFO, TOXCENTER, USPAT2, USPATFULL, USPATOLD
 (*File contains numerically searchable property data)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

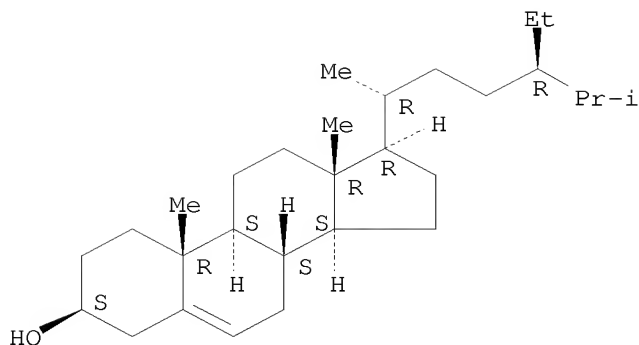
755 REFERENCES IN FILE CA (1907 TO DATE)
 54 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 759 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 34 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=> s angelicin
L2 55 ANGELICIN

=> d 55

L2 ANSWER 55 OF 55 REGISTRY COPYRIGHT 2008 ACS on STN
RN 83-46-5 REGISTRY
ED Entered STN: 16 Nov 1984
CN Stigmast-5-en-3-ol, (3 β)- (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Nimbosterol (6CI)
CN Stigmast-5-en-3 β -ol (8CI)
OTHER NAMES:
CN (-)- β -Sitosterol
CN (24R)-Ethylcholest-5-en-3 β -ol
CN (24R)-Stigmast-5-en-3 β -ol
CN α -Dihydrofucosterol
CN α -Phytosterol
CN β -Sitosterin
CN β -Sitosterol
CN Δ 5-Stigmasten-3 β -ol
CN 22,23-Dihydrostigmasterol
CN 24 α -Ethylcholesterol
CN Angelicin
CN Angelicin (steroid)
CN Azuprostat
CN Betaprost
CN Cinchol
CN Cupreol
CN Harzol
CN NSC 18173
CN NSC 49083
CN NSC 8096
CN Prostrasal
CN Quebrachol
CN Rhammol
CN Rhamnol
CN Sito-Lande
CN Sitosterol
CN SKF 14463
CN Sobatum
CN Stigmasterol, 22,23-dihydro-
FS STEREOSEARCH
DR 8003-23-4, 15764-35-9, 76772-70-8, 182512-23-8
MF C29 H50 O
CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOSIS,
BIOTECHNO, CA, CAOLD, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMINFORMRX,
CHEMLIST, CSCHM, DDFU, DETHERM*, DRUGU, EMBASE, IFICDB, IFIPAT, IFIUDB,
IPA, MRCK*, MSDS-OHS, NAPRALERT, PIRA, PROMT, PS, RTECS*, SCISEARCH,
SPECINFO, SYNTHLINE, TOXCENTER, ULIDAT, USPAT2, USPATFULL, USPATOLD,
VETU
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**
(**Enter CHEMLIST File for up-to-date regulatory information)

Absolute stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

13643 REFERENCES IN FILE CA (1907 TO DATE)
 245 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 13743 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 12 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=> file caplus

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

31.06

31.27

FILE 'CAPLUS' ENTERED AT 17:58:50 ON 30 JUL 2008

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FILE COVERS 1907 - 30 Jul 2008 VOL 149 ISS 5

FILE LAST UPDATED: 29 Jul 2008 (20080729/ED)

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<http://www.cas.org/legal/infopolicy.html>

=> s l1 <> or isopsoralen?

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COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

0.48

31.75

FILE 'REGISTRY' ENTERED AT 17:59:10 ON 30 JUL 2008
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SET COMMAND COMPLETED

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L3 SEL L1 1- CHEM : 33 TERMS

SET SMARTSELECT OFF
SET COMMAND COMPLETED

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	12.11	43.86

FILE 'CAPLUS' ENTERED AT 17:59:10 ON 30 JUL 2008
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S L3 OR ISOPSORALEN?

L5 236 ISOPSORALEN?
1087 L4 OR ISOPSORALEN?

=> s l5 or furocoumarin or angecin or nsc 404563
1351 FUROCOUMARIN
1833 FUROCOUMARINS
2296 FUROCOUMARIN
(FUROCOUMARIN OR FUROCOUMARINS)
1 ANGECIN
4254 NSC
778 NSCS
4751 NSC
(NSC OR NSCS)
0 404563
0 NSC 404563
(NSC(W)404563)
L6 2941 L5 OR FUROCOUMARIN OR ANGECIN OR NSC 404563

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191 THALASSAEMIA
11 THALASSAEMIAS
202 THALASSAEMIA
(THALASSAEMIA OR THALASSAEMIAS)
5965 THALASSEMIA
399 THALASSEMIAS
6023 THALASSEMIA
(THALASSEMIA OR THALASSEMIAS)
10046 "ANEMIA (DISEASE)"/CT
4543 THALASSEMIA/CT
1126 THALASSEMIC
69 THALASSEMICS
1163 THALASSEMIC
(THALASSEMIC OR THALASSEMICS)
17 THALASSAEMIC
1 THALASSAEMICS
18 THALASSAEMIC
(THALASSAEMIC OR THALASSAEMICS)
L7 15878 THALASSAEMIA OR THALASSEMIA OR ("ANEMIA (DISEASE)"/CT OR THALAS

SEMIA/CT) OR THALASSEMIC OR THALASSAEMIC

=> s l6 and l7
L8 10 L6 AND L7

=> focus
PROCESSING COMPLETED FOR L8
L9 10 FOCUS L8 1-

=> d ibib abs 1-10

L9 ANSWER 1 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2004:120717 CAPLUS
DOCUMENT NUMBER: 140:157454
TITLE: Use of angelicin and its structural analogs
for the treatment of thalassemia
INVENTOR(S): Bianchi, Nicoletta; Borgatti, Monica; Gambari,
Roberto; Lampronti, Ilaria
PATENT ASSIGNEE(S): Universita' Degli Studi Di Ferrara, Italy;
Associazione Veneta Per La Lotta Alla Talassemia
SOURCE: PCT Int. Appl., 18 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004012729	A1	20040212	WO 2003-IB3462	20030730
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003249472	A1	20040223	AU 2003-249472	20030730
EP 1545506	A1	20050629	EP 2003-766580	20030730
EP 1545506	B1	20080220		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
AT 386513	T	20080315	AT 2003-766580	20030730
US 20060111433	A1	20060525	US 2005-522737	20051012
PRIORITY APPLN. INFO.:			IT 2002-TO684	A 20020731
			WO 2003-IB3462	W 20030730

AB The invention describes the use of angelicin and its structural analogs for the preparation of a medicament for the therapeutic treatment of beta-thalassemia. A structural analog which is particularly preferred for this purpose is bergapten.

L9 ANSWER 2 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2008:177329 CAPLUS
DOCUMENT NUMBER: 148:345420
TITLE: Structure and biological activity of
furocoumarins
AUTHOR(S): Gambari, Roberto; Lampronti, Ilaria; Bianchi,
Nicoletta; Zuccato, Cristina; Viola, Giampietro;
Vedaldi, Daniela; Dall'Acqua, Francesco
CORPORATE SOURCE: ER-GenTech, Department of Biochemistry and Molecular
Biology, Section of Molecular Biology, University of
Ferrara, Ferrara, 44100, Italy
SOURCE: Topics in Heterocyclic Chemistry (2007), 9(Bioactive

Heterocycles III), 265-276
CODEN: THCOA6; ISSN: 1861-9282
Springer GmbH

PUBLISHER:
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

AB In this review we summarize the structure and biol. effects of linear and angular psoralens. These compds. exhibit very interesting biol. effects on cell cycle, apoptosis and differentiation. These mols. should be considered as promising drugs in the therapy of several diseases, including psoriasis, mycosis fungoides, cancer. In addition, pre-clin. data demonstrate a possible employment of these mols. for the treatment of β -thalassemia.

L9 ANSWER 3 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2003:786184 CAPLUS

DOCUMENT NUMBER: 140:157093

TITLE: Accumulation of γ -globin mRNA in human erythroid cells treated with angelicin

AUTHOR(S): Lampronti, Ilaria; Bianchi, Nicoletta; Borgatti, Monica; Fibach, Eitan; Prus, Eugenia; Gambari, Roberto
CORPORATE SOURCE: Department of Biochemistry and Molecular Biology, University of Ferrara, Ferrara, Italy

SOURCE: European Journal of Haematology (2003), 71(3), 189-195
CODEN: EJHAEC; ISSN: 0902-4441

PUBLISHER: Blackwell Publishing Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The aim of the present study was to determine whether angelicin is able to increase the expression of γ -globin genes in human erythroid cells. Angelicin is structurally related to psoralens, a well-known chemical class of photosensitizers used for their antiproliferative activity in treatment of different skin diseases (i.e., psoriasis and vitiligo). To verify the activity of angelicin, we employed two exptl. cell systems, the human leukemic K562 cell line and the two-phase liquid culture of human erythroid progenitors isolated from normal donors. The results of our investigation suggest that angelicin, compared with cytosine arabinoside, mithramycin and cisplatin, is a powerful inducer of erythroid differentiation and γ -globin mRNA accumulation of human leukemia K562 cells. In addition, when normal human erythroid precursors were cultured in the presence of angelicin, increases of γ -globin mRNA accumulation and fetal Hb (HbF) production, even higher than those obtained using hydroxyurea, were detected. These results could have practical relevance, as pharmacol.-mediated regulation of the expression of human γ -globin genes, leading to HbF induction, is considered a potential therapeutic approach in hematol. disorders, including β -thalassemia and sickle cell anemia.

REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 4 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2008:158569 CAPLUS

DOCUMENT NUMBER: 148:397073

TITLE: Induction of γ -globin mRNA, erythroid differentiation and apoptosis in UVA-irradiated human erythroid cells in the presence of furocoumarin derivatives

AUTHOR(S): Viola, Giampietro; Vedaldi, Daniela; Dall'Acqua, Francesco; Fortunato, Elena; Basso, Giuseppe; Bianchi, Nicoletta; Zuccato, Cristina; Borgatti, Monica; Lampronti, Ilaria; Gambari, Roberto
CORPORATE SOURCE: Department of Pharmaceutical Sciences, University of Padova, Padua, 35131, Italy

SOURCE: Biochemical Pharmacology (2008), 75(4), 810-825
CODEN: BCPA6; ISSN: 0006-2952

PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Psoralens, also known as furocoumarins, are a class of photosensitizers largely used in the therapy of various skin diseases. In this study we have evaluated the combined effects of UVA irradiation and furocoumarins derivs. on (a) erythroid differentiation and apoptosis of human leukemia K562 cells and (b) globin gene expression in cultures of human erythroid progenitors derived from the peripheral blood. To prove the activity of a series of linear and angular furocoumarins derivs., we employed the human leukemia K562 cell line and the two-phase liquid culture procedure for growing erythroid progenitors. Quant. real-time reverse transcription polymerase-chain assay (Q-RT-PCR) was employed for quantification of the accumulation of globin mRNAs. The results obtained demonstrate that both linear and angular furocoumarins are strong inducers of erythroid differentiation of K562 cells. From a preliminary screening, we have selected two derivs., 5-methoxypsoralen (5-MOP) and trimethylangelicin (TMA), for which we have investigated their mechanism of action. The cell cycle anal. showed that these derivs. induce, after irradiation, a cell

cycle

arrest in the G2/M phase, followed by apoptosis. Mitochondrial depolarization and caspases activation seem to be involved in the mechanism of cell death. In erythroid precursor cells, psoralens in combination with UVA irradiation, stimulate at very low concns. a preferential

increase of γ -globin mRNA. Altogether, these data suggest that psoralen derivs. warrant further evaluation as potential therapeutic drugs in β -thalassemia and sickle cell anemia.

REFERENCE COUNT: 59 THERE ARE 59 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 5 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1988:183297 CAPLUS

DOCUMENT NUMBER: 108:183297

ORIGINAL REFERENCE NO.: 108:30033a,30036a

TITLE: Method and kit for rapid detection of nucleic acid sequences in a sample by labeling the sample

INVENTOR(S): Dattagupta, Nanibhushan; Rae, Peter M. M.; Rabin, Daniel U.; Huguenel, Edward D.

PATENT ASSIGNEE(S): Molecular Diagnostics, Inc., USA

SOURCE: Eur. Pat. Appl., 29 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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EP 235726	A2	19870909	EP 1987-102577	19870224
EP 235726	A3	19890510		
EP 235726	B1	19930519		
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, NL, SE				
NO 8700613	A	19870907	NO 1987-613	19870217
CA 1295535	C	19920211	CA 1987-530235	19870220
AT 89606	T	19930615	AT 1987-102577	19870224
FI 8700923	A	19870906	FI 1987-923	19870303
DK 8701120	A	19870906	DK 1987-1120	19870304
ZA 8701554	A	19871230	ZA 1987-1554	19870304
AU 8769723	A	19870910	AU 1987-69723	19870305
AU 599083	B2	19900712		
JP 62265999	A	19871118	JP 1987-51169	19870305
CA 1314794	C	19930323	CA 1987-553597	19871204
US 5348855	A	19940920	US 1991-772625	19911004
PRIORITY APPLN. INFO.:			US 1986-836378	A 19860305
			US 1986-943006	A 19861229

EP 1987-102577 A 19870224
US 1987-24643 A 19870311

AB A method for detecting ≥ 1 microorganism or polynucleotide sequence from eukaryotic sources in a nucleic acid-containing sample comprises (a) labeling the nucleic acids in the test sample; (b) immobilizing an oligonucleotide or a single-stranded nucleic acid of ≥ 1 known microorganism or sequences from eukaryotic sources to make ≥ 1 probe; (c) contacting, under hybridization conditions, the labeled single-stranded sample nucleic acid and the immobilized probe to form a hybridized labeled nucleic acid; and (d) assaying for the hybridized nucleic acid by detecting the label. A kit comprises immobilized probe, reagent for labeling the sample nucleic acids, reagent for denaturing the nucleic acids, and hybridization reagents. Urine samples from patients with suspected urinary tract infections were centrifuged, treated with NaOH, and heated to 100° to lyse the cells. The suspension was diluted with Na borate buffer and neutralized to pH 7. Biotin-PEG-angelicin (preparation described) was added and the mixture was irradiated with a long-wavelength UV lamp for 15 min. The irradiated sample was added to hybridization reagents and hybridization was conducted with probes (whole genomic DNA of *Escherichia coli*, *Klebsiella pneumoniae*, *Proteus vulgaris*, etc.) immobilized onto nitrocellulose paper. Hybridization was detected by an immunogold assay with affinity-isolated goat anti-biotin antibody and Ag enhancement. A spot of human DNA was also present on the paper for detection of leukocytes.

L9 ANSWER 6 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2008:850726 CAPLUS
TITLE: Furocoumarins photolysis products induce differentiation of human erythroid cells
AUTHOR(S): Viola, Giampietro; Vedaldi, Daniela; Dall'Acqua, Francesco; Lampronti, Ilaria; Bianchi, Nicoletta; Zuccato, Cristina; Borgatti, Monica; Gambari, Roberto
CORPORATE SOURCE: Department of Pharmaceutical Sciences, University of Padova, Via Marzolo 5, University of Padova, Padua, 35131, Italy
SOURCE: Journal of Photochemistry and Photobiology, B: Biology (2008), 92(1), 24-28
CODEN: JPPBEG; ISSN: 1011-1344
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Psoralens, also known as furocoumarins, are a well-known class of photosensitizers largely used in the therapy of various skin disease. In this study we have evaluated the effects of crude pre-irradiated solns. of furocoumarins derivs. on (a) erythroid differentiation and apoptosis of human leukemic K562 cells and (b) Hb synthesis in cultures of human erythroid progenitors derived from the peripheral blood. To prove the activity of a mixture of photoproducts generated by UVA irradiation of

the

three psoralen derivs. 5-methoxypsoralen (5-MOP) 8-methoxypsoralen (8-MOP), and angelicin (ANG), we employed the human leukemic K562 cell line and the two-phase liquid culture procedure for growing erythroid progenitors. The results obtained demonstrate that pre-irradiated solns. of psoralen derivs. significantly induce erythroid differentiation of K562 cells irrespectively of the type of derivative used, suggesting that the active photoproduct(s) share a common structure. Interestingly, solns. of psoralens irradiated in anaerobic conditions do not exhibit erythroid inducing ability, indicating that the effect is mostly due to photooxidized psoralen products. In erythroid precursor cells, psoralens photolysis products stimulates at low concns. an increase of Hb A and Hb F. Altogether, these data suggest that photoproducts of psoralen warrant further evaluation as potential therapeutic drugs in β -thalassemia and sickle cell anemia.

L9 ANSWER 7 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1988:164418 CAPLUS

DOCUMENT NUMBER: 108:164418
ORIGINAL REFERENCE NO.: 108:26955a,26958a
TITLE: Preparation and use of reagents for a single probe solution-phase hybridization assay for the detection of a nucleotide sequence, and kits containing the reagents
INVENTOR(S): Dattagupta, Nanibhushan
PATENT ASSIGNEE(S): Molecular Diagnostics, Inc., USA
SOURCE: Eur. Pat. Appl., 50 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 237833	A2	19870923	EP 1987-102576	19870224
EP 237833	A3	19910116		
EP 237833	B1	19930113		
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, NL, SE				
CA 1290664	C	19911015	CA 1986-526423	19861229
NO 8700612	A	19870907	NO 1987-612	19870217
AT 84574	T	19930115	AT 1987-102576	19870224
ES 2053457	T3	19940801	ES 1987-102576	19870224
FI 8700922	A	19870906	FI 1987-922	19870303
DK 8701121	A	19870906	DK 1987-1121	19870304
ZA 8701555	A	19871125	ZA 1987-1555	19870304
AU 8769724	A	19870910	AU 1987-69724	19870305
JP 62282599	A	19871208	JP 1987-51170	19870305
US 4968602	A	19901106	US 1989-442423	19891121
PRIORITY APPLN. INFO.:			US 1986-836360	A 19860305
			US 1986-927613	A 19861114
			EP 1987-102576	A 19870224

AB A particular nucleic acid sequence of clin. significance can be rapidly determined by a homogeneous single-probe hybridization assay. The test sample containing chemical modified nucleic acids having a label (or a reactive site) will hybridize with a nucleic acid probe carrying a reactive site (or a label). The hybrids are selectively separated out by contacting then with an immobilized reactive partner. The hybrid and the reactive partner form a stable bond, and the extent of hybridization can be measured by determining the label in the immobilized fraction or a decrease in the label in the remaining solution. The homogeneous single-probe hybridization method, as described above was employed to detect the presence of α -thalassemia in prenatal samples (no data). The sample nucleic acid and the probe were labeled photochem. with biotin and 4'-aminomethyl-4,5' di-Me angelicin, resp.

L9 ANSWER 8 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1989:550062 CAPLUS
DOCUMENT NUMBER: 111:150062
ORIGINAL REFERENCE NO.: 111:24949a,24952a
TITLE: Nucleic acid sequence determination by hybridization probe and its use in the identification of microorganisms and prokaryotic or eukaryotic DNA and in clinical diagnosis
INVENTOR(S): Dattagupta, Nanibhushan; Rabin, Daniel; Rae, Peter; Huguenel, Edward
PATENT ASSIGNEE(S): Molecular Diagnostics, Inc., USA
SOURCE: Eur. Pat. Appl., 31 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent

LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 281927	A2	19880914	EP 1988-103221	19880303
EP 281927	A3	19910417		
EP 281927	B1	19950628		
R: CH, DE, ES, FR, GB, GR, IT, LI, NL, SE				
CA 1314794	C	19930323	CA 1987-553597	19871204
AU 8812151	A	19880915	AU 1988-12151	19880223
AU 601021	B2	19900830		
JP 63313598	A	19881221	JP 1988-56517	19880311
US 5348855	A	19940920	US 1991-772625	19911004
PRIORITY APPLN. INFO.:				US 1987-24643 A 19870311
				US 1986-836378 B2 19860305
				US 1986-943006 A 19861229

AB A method for the detection and identification of microorganisms or nucleic acid sequences in a test sample comprises: (1) labeling the nucleic acids in the sample, (2) contacting the labeled nucleic acids with ≥ 1 immobilized probe containing complementary nucleic acids under hybridization conditions, and (3) detecting the label. The labeling compound 4'-biotinyl-PEG-4,5'-dimethylangelicin (I) was prepared. In α -thalassemia diagnosis, a test sample containing nucleic acid was dissolved in 10 mM borate buffer (pH 8.0) to a final concentration of .apprx.20 $\mu\text{g/mL}$. To the nucleic acid solution I in aqueous solution was added to a final concentration of 10 $\mu\text{g/mL}$. The mixture was then irradiated at long wavelength irradiation for .apprx.60 min using a black ray UVL 56 lamp. The labeled test sample was hybridized with probes immobilized on a nitrocellulose strip at 42° for 16 h and the biotinylated hybrids were detected by a colorimetric or chemiluminescence method.

L9 ANSWER 9 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2002:638196 CAPLUS
DOCUMENT NUMBER: 137:165813
TITLE: Methods and compositions for analyzing nucleic acids
INVENTOR(S): Dattagupta, Nanibhushan
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 15 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20020115074	A1	20020822	US 2001-791030	20010220
US 6620586	B2	20030916		
WO 2002070749	A2	20020912	WO 2002-US3782	20020205
WO 2002070749	A3	20070531		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, AP, EA, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, EP, OA				

AU 2002311759	A1	20020919	AU 2002-311759	20020205
US 20030211532	A1	20031113	US 2003-458606	20030609
PRIORITY APPLN. INFO.:			US 2001-791030	A 20010220
			WO 2002-US3782	W 20020205

AB The present invention relates to methods and compns. for analyzing nucleic acids. In particular, the invention provides for methods and combinations for analyzing nucleic acids in a plurality of samples using a plurality of detectably different signature labels and a probe that is hybridizable to each of the target nucleic acids. The invention also provides for a method for quantifying a nucleic acid by analyzing the amount of a label, e.g., a photoactivatable label, attached to the target nucleic acid.

L9 ANSWER 10 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1992:56598 CAPLUS

DOCUMENT NUMBER: 116:56598

ORIGINAL REFERENCE NO.: 116:9751a,9754a

TITLE: Defective DNA endonuclease activities in Fanconi's anemia cells, complementation groups A and B

AUTHOR(S): Lambert, Muriel W.; Tsongalis, Gregory J.; Lambert, W. Clark; Hang, Bo; Parrish, David D.

CORPORATE SOURCE: New Jersey Med. Sch., UMDNJ, Newark, NJ, 07103, USA

SOURCE: Mutation Research, DNA Repair (1991), 273(1), 57-71

CODEN: MRDRBE; ISSN: 0921-8777

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Cells from patients with the inherited disorder, Fanconi's anemia (FA), were analyzed for endonucleases which recognize DNA interstrand cross-links and monoadducts produced by psoralen plus UVA irradiation. Two chromatin-associated DNA endonuclease activities, defective in their ability to incise DNA-containing adducts produced by psoralen plus UVA light, have been identified and isolated in nuclei of FA cells. In FA complementation group A (FA-A) cells, one endonuclease activity, pI 4.6, which recognizes psoralen intercalation and interstrand cross-links, has 25% of the activity of the normal human endonuclease, pI 4.6, on 8-methoxypsoralen (8-MOP) plus UVA-damaged DNA. In FA complementation group B (FA-B) cells, a second endonuclease activity, pI 7.6, which recognizes psoralen monoadducts, has 50% and 55% of the activity, resp., of the corresponding normal endonuclease on 8-MOP or angelicin plus UVA-damaged DNA. Kinetic anal. reveals that both the FA-A endonuclease activity, pI 4.6, and the FA-B endonuclease activity, pI 7.6, have decreased affinity for psoralen plus UVA-damaged DNA. Both the normal and FA endonucleases showed .apprx.2.5-fold increase in activity on psoralen plus UVA-damaged reconstituted nucleosomal DNA compared to damaged non-nucleosomal DNA, indicating that interaction of these FA endonucleases with nucleosomal DNA is not impaired. These deficiencies in two nuclear DNA endonuclease activities from FA-A and FA-B cells correlate with decreased levels of unscheduled DNA synthesis (UDS), in response to 8-MOP or angelicin plus UVA irradiation, in these cells in culture.

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(FILE 'HOME' ENTERED AT 17:55:08 ON 30 JUL 2008)

FILE 'REGISTRY' ENTERED AT 17:55:28 ON 30 JUL 2008

L1 8 S ISOPSORALEN

L2 55 S ANGELICIN

FILE 'CAPLUS' ENTERED AT 17:58:50 ON 30 JUL 2008

FILE 'REGISTRY' ENTERED AT 17:59:10 ON 30 JUL 2008

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 L5 1087 S L4 OR ISOPSORALEN?
 L6 2941 S L5 OR FUROCOUMARIN OR ANGEICIN OR NSC 404563
 E THALASSEMIA+ALL/CT
 L7 15878 S THALASSAEMIA OR THALASSEMIA OR E4, E5 OR THALASSEMIC OR THALA
 L8 10 S L6 AND L7
 L9 10 FOCUS L8 1-

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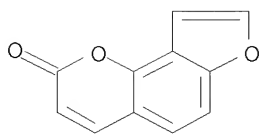
L9 ANSWER 1 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2004:120717 CAPLUS
 DOCUMENT NUMBER: 140:157454
 TITLE: Use of angelicin and its structural analogs
 for the treatment of thalassemia
 INVENTOR(S): Bianchi, Nicoletta; Borgatti, Monica; Gambari,
 Roberto; Lampronti, Ilaria
 PATENT ASSIGNEE(S): Universita' Degli Studi Di Ferrara, Italy;
 Associazione Veneta Per La Lotta Alla Talassemia
 SOURCE: PCT Int. Appl., 18 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004012729	A1	20040212	WO 2003-IB3462	20030730
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
AU 2003249472	A1	20040223	AU 2003-249472	20030730
EP 1545506	A1	20050629	EP 2003-766580	20030730
EP 1545506	B1	20080220		
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK			
AT 386513	T	20080315	AT 2003-766580	20030730
US 20060111433	A1	20060525	US 2005-522737	20051012
PRIORITY APPLN. INFO.:			IT 2002-TO684	A 20020731
			WO 2003-IB3462	W 20030730

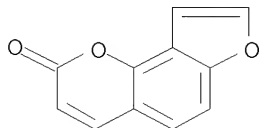
AB The invention describes the use of angelicin and its structural analogs for the preparation of a medicament for the therapeutic treatment of beta-thalassemia. A structural analog which is particularly preferred for this purpose is bergapten.

IT 523-50-2, Angelicin 523-50-2D,
 Angelicin, analogs
 RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (angelicin and structural analogs for treatment of thalassemia)

RN 523-50-2 CAPLUS
 CN 2H-Furo[2,3-h]-1-benzopyran-2-one (CA INDEX NAME)



RN 523-50-2 CAPLUS
 CN 2H-Furo[2,3-h]-1-benzopyran-2-one (CA INDEX NAME)

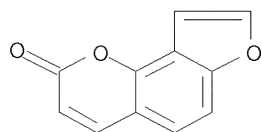


L9 ANSWER 2 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2008:177329 CAPLUS
 DOCUMENT NUMBER: 148:345420
 TITLE: Structure and biological activity of furocoumarins
 AUTHOR(S): Gambari, Roberto; Lampronti, Ilaria; Bianchi, Nicoletta; Zuccato, Cristina; Viola, Giampietro; Vedaldi, Daniela; Dall'Acqua, Francesco
 CORPORATE SOURCE: ER-GenTech, Department of Biochemistry and Molecular Biology, Section of Molecular Biology, University of Ferrara, Ferrara, 44100, Italy
 SOURCE: Topics in Heterocyclic Chemistry (2007), 9(Bioactive Heterocycles III), 265-276
 CODEN: THCOA6; ISSN: 1861-9282
 PUBLISHER: Springer GmbH
 DOCUMENT TYPE: Journal; General Review
 LANGUAGE: English
 AB In this review we summarize the structure and biol. effects of linear and angular psoralens. These compds. exhibit very interesting biol. effects on cell cycle, apoptosis and differentiation. These mols. should be considered as promising drugs in the therapy of several diseases, including psoriasis, mycosis fungoides, cancer. In addition, pre-clin. data demonstrate a possible employment of these mols. for the treatment of β -thalassemia.

L9 ANSWER 3 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2003:786184 CAPLUS
 DOCUMENT NUMBER: 140:157093
 TITLE: Accumulation of γ -globin mRNA in human erythroid cells treated with angelicin
 AUTHOR(S): Lampronti, Ilaria; Bianchi, Nicoletta; Borgatti, Monica; Fibach, Eitan; Prus, Eugenia; Gambari, Roberto
 CORPORATE SOURCE: Department of Biochemistry and Molecular Biology, University of Ferrara, Ferrara, Italy
 SOURCE: European Journal of Haematology (2003), 71(3), 189-195
 CODEN: EJHAEC; ISSN: 0902-4441
 PUBLISHER: Blackwell Publishing Ltd.
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB The aim of the present study was to determine whether angelicin is able to increase the expression of γ -globin genes in human erythroid cells. Angelicin is structurally related to psoralens, a well-known chemical class of photosensitizers used for their antiproliferative activity in treatment of different skin diseases (i.e., psoriasis and vitiligo). To verify the activity of angelicin, we employed two exptl. cell systems, the human leukemic K562 cell line and the two-phase liquid culture of human erythroid progenitors isolated from

normal donors. The results of our investigation suggest that angelicin, compared with cytosine arabinoside, mithramycin and cisplatin, is a powerful inducer of erythroid differentiation and γ -globin mRNA accumulation of human leukemia K562 cells. In addition, when normal human erythroid precursors were cultured in the presence of angelicin, increases of γ -globin mRNA accumulation and fetal Hb (HbF) production, even higher than those obtained using hydroxyurea, were detected. These results could have practical relevance, as pharmacol.-mediated regulation of the expression of human γ -globin genes, leading to HbF induction, is considered a potential therapeutic approach in hemol. disorders, including β - thalassemia and sickle cell anemia.

IT 523-50-2, Angelicin
 RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (angelicin effect on γ -globin mRNA accumulation in human erythroid cells)
 RN 523-50-2 CAPLUS
 CN 2H-Furo[2,3-h]-1-benzopyran-2-one (CA INDEX NAME)



REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 4 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2008:158569 CAPLUS

DOCUMENT NUMBER: 148:397073

TITLE: Induction of γ -globin mRNA, erythroid differentiation and apoptosis in UVA-irradiated human erythroid cells in the presence of furocoumarin derivatives

AUTHOR(S): Viola, Giampietro; Vedaldi, Daniela; Dall'Acqua, Francesco; Fortunato, Elena; Basso, Giuseppe; Bianchi, Nicoletta; Zuccato, Cristina; Borgatti, Monica; Lampronti, Ilaria; Gambari, Roberto

CORPORATE SOURCE: Department of Pharmaceutical Sciences, University of Padova, Padua, 35131, Italy

SOURCE: Biochemical Pharmacology (2008), 75(4), 810-825
 CODEN: BCPA6; ISSN: 0006-2952

PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

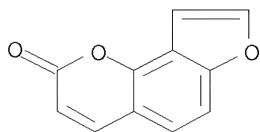
AB Psoralens, also known as furocoumarins, are a class of photosensitizers largely used in the therapy of various skin diseases. In this study we have evaluated the combined effects of UVA irradiation and furocoumarins derivs. on (a) erythroid differentiation and apoptosis of human leukemia K562 cells and (b) globin gene expression in cultures of human erythroid progenitors derived from the peripheral blood. To prove the activity of a series of linear and angular furocoumarins derivs., we employed the human leukemia K562 cell line and the two-phase liquid culture procedure for growing erythroid progenitors. Quant. real-time reverse transcription polymerase-chain assay (Q-RT-PCR) was employed for quantification of the accumulation of globin mRNAs. The results obtained demonstrate that both linear and angular furocoumarins are strong inducers of erythroid differentiation of K562 cells. From a preliminary screening, we have selected two derivs., 5-methoxypsoralen (5-MOP) and trimethylangelicin (TMA), for which we have investigated their mechanism of action. The cell cycle anal. showed that these derivs. induce, after irradiation, a cell

cycle

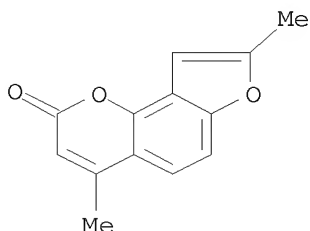
arrest in the G2/M phase, followed by apoptosis. Mitochondrial depolarization and caspases activation seem to be involved in the mechanism of cell death. In erythroid precursor cells, psoralens in combination with UVA irradiation, stimulate at very low concns. a preferential increase of γ -globin mRNA. Altogether, these data suggest that psoralen derivs. warrant further evaluation as potential therapeutic drugs in β -thalassemia and sickle cell anemia.

IT 523-50-2, Angelicin 4063-41-6
 RL: DMA (Drug mechanism of action); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (γ -globin mRNA, cell differentiation and apoptosis in UVA-irradiated human erythroid cells in presence of furocoumarin derivs.)

RN 523-50-2 CAPLUS
 CN 2H-Furo[2,3-h]-1-benzopyran-2-one (CA INDEX NAME)



RN 4063-41-6 CAPLUS
 CN 2H-Furo[2,3-h]-1-benzopyran-2-one, 4,8-dimethyl- (CA INDEX NAME)



REFERENCE COUNT: 59 THERE ARE 59 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 5 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1988:183297 CAPLUS
 DOCUMENT NUMBER: 108:183297
 ORIGINAL REFERENCE NO.: 108:30033a,30036a
 TITLE: Method and kit for rapid detection of nucleic acid sequences in a sample by labeling the sample
 INVENTOR(S): Dattagupta, Nanibhushan; Rae, Peter M. M.; Rabin, Daniel U.; Huguenel, Edward D.
 PATENT ASSIGNEE(S): Molecular Diagnostics, Inc., USA
 SOURCE: Eur. Pat. Appl., 29 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 2
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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EP 235726	A2	19870909	EP 1987-102577	19870224
EP 235726	A3	19890510		
EP 235726	B1	19930519		
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, NL, SE				
NO 8700613	A	19870907	NO 1987-613	19870217

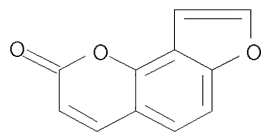
CA 1295535	C	19920211	CA 1987-530235	19870220
AT 89606	T	19930615	AT 1987-102577	19870224
FI 8700923	A	19870906	FI 1987-923	19870303
DK 8701120	A	19870906	DK 1987-1120	19870304
ZA 8701554	A	19871230	ZA 1987-1554	19870304
AU 8769723	A	19870910	AU 1987-69723	19870305
AU 599083	B2	19900712		
JP 62265999	A	19871118	JP 1987-51169	19870305
CA 1314794	C	19930323	CA 1987-553597	19871204
US 5348855	A	19940920	US 1991-772625	19911004
PRIORITY APPLN. INFO.:			US 1986-836378	A 19860305
			US 1986-943006	A 19861229
			EP 1987-102577	A 19870224
			US 1987-24643	A 19870311

AB A method for detecting ≥ 1 microorganism or polynucleotide sequence from eukaryotic sources in a nucleic acid-containing sample comprises (a) labeling the nucleic acids in the test sample; (b) immobilizing an oligonucleotide or a single-stranded nucleic acid of ≥ 1 known microorganism or sequences from eukaryotic sources to make ≥ 1 probe; (c) contacting, under hybridization conditions, the labeled single-stranded sample nucleic acid and the immobilized probe to form a hybridized labeled nucleic acid; and (d) assaying for the hybridized nucleic acid by detecting the label. A kit comprises immobilized probe, reagent for labeling the sample nucleic acids, reagent for denaturing the nucleic acids, and hybridization reagents. Urine samples from patients with suspected urinary tract infections were centrifuged, treated with NaOH, and heated to 100° to lyse the cells. The suspension was diluted with Na borate buffer and neutralized to pH 7. Biotin-PEG-angelicin (preparation described) was added and the mixture was irradiated with a long-wavelength UV lamp for 15 min. The irradiated sample was added to hybridization reagents and hybridization was conducted with probes (whole genomic DNA of *Escherichia coli*, *Klebsiella pneumoniae*, *Proteus vulgaris*, etc.) immobilized onto nitrocellulose paper. Hybridization was detected by an immunogold assay with affinity-isolated goat anti-biotin antibody and Ag enhancement. A spot of human DNA was also present on the paper for detection of leukocytes.

IT 523-50-2, Angelicin
RL: ANST (Analytical study)
(labeling of cellular DNA with)

RN 523-50-2 CAPLUS

CN 2H-Furo[2,3-h]-1-benzopyran-2-one (CA INDEX NAME)



L9 ANSWER 6 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2008:850726 CAPLUS

TITLE: Furocoumarins photolysis products induce differentiation of human erythroid cells

AUTHOR(S): Viola, Giampietro; Vedaldi, Daniela; Dall'Acqua, Francesco; Lampronti, Ilaria; Bianchi, Nicoletta; Zuccato, Cristina; Borgatti, Monica; Gambari, Roberto

CORPORATE SOURCE: Department of Pharmaceutical Sciences, University of Padova, Via Marzolo 5, University of Padova, Padua, 35131, Italy

SOURCE: Journal of Photochemistry and Photobiology, B: Biology (2008), 92(1), 24-28
CODEN: JPPBEG; ISSN: 1011-1344

PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Psoralens, also known as furocoumarins, are a well-known class of photosensitizers largely used in the therapy of various skin disease. In this study we have evaluated the effects of crude pre-irradiated solns. of furocoumarins derivs. on (a) erythroid differentiation and apoptosis of human leukemic K562 cells and (b) Hb synthesis in cultures of human erythroid progenitors derived from the peripheral blood. To prove the activity of a mixture of photoproducts generated by UVA irradiation of

the

three psoralen derivs. 5-methoxypsoralen (5-MOP) 8-methoxypsoralen (8-MOP), and angelicin (ANG), we employed the human leukemic K562 cell line and the two-phase liquid culture procedure for growing erythroid progenitors. The results obtained demonstrate that pre-irradiated solns. of psoralen derivs. significantly induce erythroid differentiation of K562 cells irresp. of the type of derivative used, suggesting that the active photoproduct(s) share a common structure. Interestingly, solns. of psoralens irradiated in anaerobic conditions do not exhibits erythroid inducing ability, indicating that the effect is mostly due to photooxidized psoralen products. In erythroid precursor cells, psoralens photolysis products stimulates at low concns. an increase of Hb A and Hb F. Altogether, these data suggest that photoproducts of psoralen warrant further evaluation as potential therapeutic drugs in β -thalassemia and sickle cell anemia.

L9 ANSWER 7 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1988:164418 CAPLUS

DOCUMENT NUMBER: 108:164418

ORIGINAL REFERENCE NO.: 108:26955a,26958a

TITLE: Preparation and use of reagents for a single probe solution-phase hybridization assay for the detection of a nucleotide sequence, and kits containing the reagents

INVENTOR(S): Dattagupta, Nanibhushan

PATENT ASSIGNEE(S): Molecular Diagnostics, Inc., USA

SOURCE: Eur. Pat. Appl., 50 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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EP 237833	A2	19870923	EP 1987-102576	19870224
EP 237833	A3	19910116		
EP 237833	B1	19930113		
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, NL, SE				
CA 1290664	C	19911015	CA 1986-526423	19861229
NO 8700612	A	19870907	NO 1987-612	19870217
AT 84574	T	19930115	AT 1987-102576	19870224
ES 2053457	T3	19940801	ES 1987-102576	19870224
FI 8700922	A	19870906	FI 1987-922	19870303
DK 8701121	A	19870906	DK 1987-1121	19870304
ZA 8701555	A	19871125	ZA 1987-1555	19870304
AU 8769724	A	19870910	AU 1987-69724	19870305
JP 62282599	A	19871208	JP 1987-51170	19870305
US 4968602	A	19901106	US 1989-442423	19891121
PRIORITY APPLN. INFO.:			US 1986-836360	A 19860305
			US 1986-927613	A 19861114
			EP 1987-102576	A 19870224

AB A particular nucleic acid sequence of clin. significance can be rapidly determined by a homogeneous single-probe hybridization assay. The test sample

containing chemical modified nucleic acids having a label (or a reactive site)

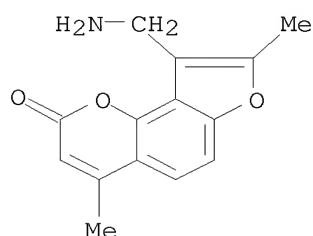
will hybridize with a nucleic acid probe carrying a reactive site (or a

label). The hybrids are selectively separated out by contacting then with an immobilized reactive partner. The hybrid and the reactive partner form a stable bond, and the extent of hybridization can be measured by determining the label in the immobilized fraction or a decrease in the label in the remaining solution. The homogeneous single-probe hybridization method, as described above was employed to detect the presence of α -thalassemia in prenatal samples (no data). The sample nucleic acid and the probe were labeled photochem. with biotin and 4'-aminomethyl-4,5' di-Me angelicin, resp.

IT 80500-62-5P, 4'-Aminomethyl-4,5' dimethyl angelicin
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of, as hybridization probe)

RN 80500-62-5 CAPLUS

CN 2H-Furo[2,3-h]-1-benzopyran-2-one, 9-(aminomethyl)-4,8-dimethyl- (CA INDEX NAME)



L9 ANSWER 8 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1989:550062 CAPLUS

DOCUMENT NUMBER: 111:150062

ORIGINAL REFERENCE NO.: 111:24949a,24952a

TITLE: Nucleic acid sequence determination by hybridization probe and its use in the identification of microorganisms and prokaryotic or eukaryotic DNA and in clinical diagnosis

INVENTOR(S): Dattagupta, Nanibhushan; Rabin, Daniel; Rae, Peter; Huguenel, Edward

PATENT ASSIGNEE(S): Molecular Diagnostics, Inc., USA

SOURCE: Eur. Pat. Appl., 31 pp.
 CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 281927	A2	19880914	EP 1988-103221	19880303
EP 281927	A3	19910417		
EP 281927	B1	19950628		
R: CH, DE, ES, FR, GB, GR, IT, LI, NL, SE				
CA 1314794	C	19930323	CA 1987-553597	19871204
AU 8812151	A	19880915	AU 1988-12151	19880223
AU 601021	B2	19900830		
JP 63313598	A	19881221	JP 1988-56517	19880311
US 5348855	A	19940920	US 1991-772625	19911004
PRIORITY APPLN. INFO.:			US 1987-24643	A 19870311
			US 1986-836378	B2 19860305
			US 1986-943006	A 19861229

AB A method for the detection and identification of microorganisms or nucleic acid sequences in a test sample comprises: (1) labeling the nucleic acids in the sample, (2) contacting the labeled nucleic acids with ≥ 1

immobilized probe containing complementary nucleic acids under hybridization conditions, and (3) detecting the label. The labeling compound 4'-biotinyl-PEG-4,5'-dimethylangelicin (I) was prepared In α -thalassemia diagnosis, a test sample containing nucleic acid was dissolved in 10 mM borate buffer (pH 8.0) to a final concentration of .apprx.20 μ g/mL. To the nucleic acid solution I in aqueous solution was added to a final concentration of 10 μ g/mL. The mixture was then irradiated at long wavelength irradiation for .apprx.60 min using a black ray UVL 56 lamp. The labeled test sample was hybridized with probes immobilized on a nitrocellulose strip at 42° for 16 h and the biotinylated hybrids were detected by a colorimetric or chemiluminescence method.

L9 ANSWER 9 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2002:638196 CAPLUS
DOCUMENT NUMBER: 137:165813
TITLE: Methods and compositions for analyzing nucleic acids
INVENTOR(S): Dattagupta, Nanibhushan
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 15 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

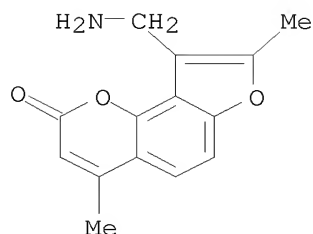
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20020115074	A1	20020822	US 2001-791030	20010220
US 6620586	B2	20030916		
WO 2002070749	A2	20020912	WO 2002-US3782	20020205
WO 2002070749	A3	20070531		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, AP, EA, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, EP, OA				
AU 2002311759	A1	20020919	AU 2002-311759	20020205
US 20030211532	A1	20031113	US 2003-458606	20030609
PRIORITY APPLN. INFO.:				
			US 2001-791030	A 20010220
			WO 2002-US3782	W 20020205

AB The present invention relates to methods and compns. for analyzing nucleic acids. In particular, the invention provides for methods and combinations for analyzing nucleic acids in a plurality of samples using a plurality of detectably different signature labels and a probe that is hybridizable to each of the target nucleic acids. The invention also provides for a method for quantifying a nucleic acid by analyzing the amount of a label, e.g., a photoactivatable label, attached to the target nucleic acid.

IT 80500-62-5P, 4'-Aminomethyl-4,5'-dimethyl angelicin
RL: ARU (Analytical role, unclassified); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation)
(methods and compns. for analyzing nucleic acids)

RN 80500-62-5 CAPLUS

CN 2H-Furo[2,3-h]-1-benzopyran-2-one, 9-(aminomethyl)-4,8-dimethyl- (CA INDEX NAME)



L9 ANSWER 10 OF 10 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1992:56598 CAPLUS

DOCUMENT NUMBER: 116:56598

ORIGINAL REFERENCE NO.: 116:9751a,9754a

TITLE: Defective DNA endonuclease activities in Fanconi's

anemia cells, complementation groups A and B

AUTHOR(S): Lambert, Muriel W.; Tsongalis, Gregory J.; Lambert, W. Clark; Hang, Bo; Parrish, David D.

CORPORATE SOURCE: New Jersey Med. Sch., UMDNJ, Newark, NJ, 07103, USA

SOURCE: Mutation Research, DNA Repair (1991), 273(1), 57-71

CODEN: MRDRBE; ISSN: 0921-8777

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Cells from patients with the inherited disorder, Fanconi's anemia (FA), were analyzed for endonucleases which recognize DNA interstrand cross-links and monoadducts produced by psoralen plus UVA irradiation. Two chromatin-associated DNA endonuclease activities, defective in their ability to incise DNA-containing adducts produced by psoralen plus UVA light, have been identified and isolated in nuclei of FA cells. In FA complementation group A (FA-A) cells, one endonuclease activity, pI 4.6, which recognizes psoralen intercalation and interstrand cross-links, has 25% of the activity of the normal human endonuclease, pI 4.6, on 8-methoxypsoralen (8-MOP) plus UVA-damaged DNA. In FA complementation group B (FA-B) cells, a second endonuclease activity, pI 7.6, which recognizes psoralen monoadducts, has 50% and 55% of the activity, resp., of the corresponding normal endonuclease on 8-MOP or angelicin plus UVA-damaged DNA. Kinetic anal. reveals that both the FA-A endonuclease activity, pI 4.6, and the FA-B endonuclease activity, pI 7.6, have decreased affinity for psoralen plus UVA-damaged DNA. Both the normal and FA endonucleases showed .apprx.2.5-fold increase in activity on psoralen plus UVA-damaged reconstituted nucleosomal DNA compared to damaged non-nucleosomal DNA, indicating that interaction of these FA endonucleases with nucleosomal DNA is not impaired. These deficiencies in two nuclear DNA endonuclease activities from FA-A and FA-B cells correlate with decreased levels of unscheduled DNA synthesis (UDS), in response to 8-MOP or angelicin plus UVA irradiation, in these cells in culture.

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